

CLAIMS

1. An exhaust treatment device, comprising:
a substrate;
an end-cone with a first end disposed about an end of the substrate and a second end comprising a snorkel;
a mat support disposed over at least a portion of the end-cone, wherein the mat support comprises a slit in operable communication with a snorkel slot and a keyhole disposed at the opposite end of the slit as the snorkel slot, and wherein at least a portion of the snorkel protrudes through the snorkel slot; and
a shell disposed around the mat support.
2. The exhaust treatment device as in Claim 1, wherein the slit has a shape selected from the group consisting of straight, saw tooth, scalloped, and combinations comprising at least one of the foregoing shapes.
3. The exhaust treatment device as in Claim 1, wherein the keyhole comprises a shape selected from the group consisting of rounded, multisided, and combinations comprising at least one of the foregoing geometries.
4. The exhaust treatment device as in Claim 1, wherein the mat support further comprises an outside edge having a saw-tooth geometry.
5. The exhaust treatment device as in Claim 1, wherein the mat support comprises a potential tear location, and wherein the slit is disposed about 75° to about 120° from the tear location.
6. The exhaust treatment device as in Claim 5, wherein the slit is disposed about 85° to about 95° from the tear location.

7. A process for forming an exhaust treatment device, comprising:
disposing a first end of an end-cone over an end of the substrate to form
a subassembly;

disposing the subassembly through a snorkel slot in a mat support such
that a snorkel of the end-cone protrudes through the snorkel slot, wherein the mat
support comprises a slit in operable communication with both the snorkel slot and a
keyhole, and wherein the mat support is disposed around at least a portion of the end-
cone and at least a portion of the substrate; and

disposing a shell around the mat support.

8. A process for forming an exhaust treatment device as in Claim 7,
further comprising disposing a catalyst on the substrate.

9. A process for forming an exhaust treatment device as in Claim 7,
wherein the mat support comprises a potential tear location, and wherein the slit is
disposed about 75° to about 120° from the tear location.

10. A process for forming an exhaust treatment device as in Claim 9,
wherein the slit is disposed about 85° to about 95° from the tear location.